JOVOV, K

(5)

Belgrade, Veterinarski Glasnik, Vol 15, No 11, 1961 (cont'd)

11. "Bases and Criteria for Setting the Level of Personal Income of Veterinary Specialist on Large Agricultural Farms" S. ANIC; pp 631-633.

12. "Our Experiences With Breakage of Fibrates in the Bladder and Urethra of Cows Using Artificial Insemination" V. VUJOSEVIC and S. [illegible] (Clinic za porodiljstvo) Veterinary Faculty Zagreb; pp 637-640 (English Summary)

13. "Our Experiences in the Treatment and Prevention of Infectious Lameness of Cows" K. JOVOV; pp 641-645.

1-Institut za Mikrobiologiju Veterinarskog fakulteta.

- 2/2 -

Dermatology

YUGOSLAVIA

SKENDZIC, Mirjana; and JOVOVIC, Dusan, Dermatovenerology Clinic of Medical Faculty of the University (Dermatovenerološka Klinika Medicinskog Fakulteta Univerziteta); Head (Upravnik) Prof Dr Slobodan PERISIC, Belgrade

"Case of Chronic Gonococcal Folliculitis"

Belgrade, Srpski Arhiv za Celokupno Lekarstvo, Vol 94, No 4, Apr 66; pp 403-407

Abstract: [German summary modified] Case history of 42-year-old man who had had gonorrhea treated with penicillin but an inadequate dose, 12 years earlier; now small closed gonorrheal abcess of outer urethra, cured without difficulty with 8 grams of chloramphenicol. Photomicrograph, photograph of Petri dish; 1 Soviet, 3 Yugoslav, 11 Western references. Manuscript received 15 Dec 65.

1/1

GRABECKI, Jerzy; JOWKIEWICZ, Stanislaw; URBANOWICZ, Henryk

Behavior of sodium potassium total calcium, inorganic phosphorus and alkaline phosphatase in guinea pig serum under the influence of ultrasonic fields. Acta physiol.polon. 12 no.1:145-152 Ja-F '60.

1. Z Zakladu Chemii Fizjologicznej Slaskiej A.M. w Zabrzu-Rokitnicy Kierownik: doc.dr S. Jozkiewicz.
(SODIUM blood)
(POTASSIUM blood)
(CALCIUM blood)
(PHOSPHORUS blood)
(PHOSPHATASES blood)
(ULTRASONICS)

S/196/62/000/006/018/018
E194/E154

AUTHOR: Joworski, Czeslaw

TITLE: Concerning the problem "3 kV d.c. or single-phase 50 c/s"

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.6, 1962, 1, abstract 6 L4. (Przegl. kolejowy, v.13, no.10, 1961, 361-368) (Polish)

TEXT: A number of calculations made by Polish scientists and design organisations and also a recent scientific technical conference on the choice of current system for electrification of the Polish railways did not confirm the thesis propounded by the French industry of the advantages of the 50 c/s system over the 3 kV d.c. system used in Poland. An economic comparison is made between the two systems, including only costs that depend on the current system used. Account is taken of the expenditure on: 1) capital used in special permanent structures (overhead system, substations) and electric locomotives, and also in their maintenance; 2) traction power costs. Formulae are given to determine the total annual costs as a function of the load carried

Card 1/2

Concerning the problem "3 kV d.c. ... S/196/62/000/006/018/018
E194/E154

for the following cases: a) 3 kV d.c; b) single-phase 50 c/s a.c; and c) diesel electric traction. The results are presented on a diagram which shows the limiting carried load that governs the selection of one system or the other. If the load is less than 9.5 million gross tons per annum, diesel electric traction is the most advantageous; with 15 million gross tons per annum and more, 3 kV d.c. is best; the 50 c/s a.c. system is most economic for loadings of 9.5-15 million gross tons per annum. The 50 c/s system has obvious advantages only over the 1.5 kV d.c. system. The advantage of 50 c/s over 3 kV d.c. depends on the nature of the lines and the load density. Very long lines with a few severe gradients are the most suitable for the 50 c/s system and also lines which are relatively lightly loaded and do not require a large number of locomotives.

[Abstractor's note: Complete translation.]

Card 2/2

L 43871-66 EWP(j) RM

ACC NR: AP6032579 SOURCE CODE: BU/0011/65/018/012/1149/1152

B

AUTHOR: Spassov, S.; Jovtscheff, A.

23

ORG: Institute of Organic Chemistry, BAN

TITLE: Conversion of the 4,5-debrom-5-phenyl-1-pentanol by means of an alkaline base at different temperatures

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 18, no. 12, 1965, 1149-1152

TOPIC TAGS: chemical synthesis, chemical reaction

ABSTRACT: A detailed description of the production of 5-phenyl-4-pentin-1-ol is presented. The starting substance is the 5-phenyl-4-penten-1-ol in trans-configuration (R. S. Collins, M. Davis, J. Chem. Soc. 1961, 1863; Chem. Abstrs. 55, 1961, 21016b). The necessary alkinol is obtained by attaching the elementary bromine and subsequent elimination of the HBr by the alkaline base. This paper was presented by Academician D. Iwanoff on 20 September 1965. Orig. art. has: 1 figure. [Orig. art. in German.] [JPRS: 36,464]

SUB CODE: 07 / SUBM DATE: none / OTH REF: 006

Card 1/1 egb

0919 2412

JOZA, J., ing.

Accuracy of large part measurements in the machine industry.
Strojirenstvi 15 no.1:57-63 Ja '65.

1. Zavody V.I. Lenina National Enterprise, Plzen.

L 9505-66 EWP(v)/EWP(k)/EWP(h)/EWP(l)

ACC NR: AP6002829 SOURCE CODE: CZ/0032/65/015/001/0057/0063

AUTHOR: Joza, J. (Engineer)

ORG: ZVIL, Plzen

TITLE: Errors in measurements of large dimensions

SOURCE: Strojirenstvi, v. 15, no. 1, 1965, 57-63

TOPIC TAGS: mechanical engineering, error, metrology, measuring instrument

ABSTRACT: The shortcomings are pointed out of the present methods of measuring large dimensions in the machine industry. The instrument readings are considered accurate, and the effects of possible errors are disregarded. There are many sources of error in the case of multisection length gages commonly used. The various sources of error affect the results differently. The author presents a systematic analysis of all possible types of errors, evaluates their effect, and indicates the necessary corrections. This work was presented by Engr. L. Novak. Orig. art. has: 5 figures and 6 tables. [JPRS]

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 004 / OTH REF: 003.
SOV REF: 002

Card 1/1

L 32028-66 EWP(v)/EWP(k)/EWP(h)/EWP(l)
ACC NR: AP6020639 SOURCE CODE: CZ/0032/66/016/001/0056/0058

AUTHOR: Joza, J. (Engineer; Plzen)

ORG: Skoda works, Plzen

TITLE: New indicator head for end gauges

SOURCE: Strojirenstvi, v. 16, no. 1, 1966, 56-58

TOPIC TAGS: industrial instrument, measuring instrument

ABSTRACT: The design is described of a new indicator head for end gauges, developed and tested at the Skoda Works in Plzen. The new design eliminates the shortcomings of previous types, facilitates measurement and provides greater accuracy. This paper was presented by Engineer J. Mrstina. Orig. art. has: 4 figures and 1 table. [Based on author's Eng. abst.] [JPRS]

SUB CODE: 13 / SUBM DATE: none / ORIG REF: 002 / OTH REF: 001
SOV REF: 001

Card 1/1

UDC: 531.717:621.941.23

JOZA, Jan, inz.

A simple device for measuring the straightness of long surfaces.
Stroj vyr 11 no.1:43 '63.

1. Zavody V.I.Lenina Plzen.

JOZA, K.

"The Research Institute of Agricultural Machinery comments on the problems of agricultural mechanization."

p. 20 (Zemelske Stroje, Vol. 3, no. 1, Jan. 1958, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 9, September 1958

JOZA, Mikulas, doc. dr.

Once more on the problem of raw wood prices. Les cas 10 no. 4: 357-370 Ap '64.

1. Higher School of Forestry and Wood Industry, Zvolen.

JOZA, V.

"Contribution to the Article 'Is the Forest an Object or a Means of Production?'", P. 26, (LES, Vol. 1, No. 1, January 1954, Bratislava, Czech.)

SO: Monthly List of East European Accessions (EEAL), LC, Vol. 4, No. 3, March 1955, Uncl.

JOZA, Mikulas, doc. dr.

Present problems of green wood and sawmill product prices. Drevo 19 no.12:462-463, 465 D '64.

1. Higher School of Forestry and Wood Industry, Zvolen.

JOZAN, D.; DEZSO, I.

Preparation of samples being tested for colorfastness.
p. 92. No. 3, March, 1956. MAGYAR TEXTILTECHNIKA.
Budapest.

SOURCE: East European Accessions List, (EEAL) Library of Congress, Vol. 5, No. 8, August, 1956.

JOZAN, D.

Evaluation of results in testing colorfastness. p. 162.
MAGYAR TEXTILTECHNIKA. (Textilipari Muszaki es Tudomanyos Egyesulet)
Budapest.
No. 5, May 1956.

SOURCES: EEAL - LC Oct. 1956 Vol 5 No. 10

JOZAN, D.

JOZAN, D. The fastness of color in textile goods. p. 293, No. 8, Aug. 1956.
MAGYAR TEXTILTECHNIKA.
Budapest.

SOURCE: EAST EUROPEAN ACCESSIONS LIST (EEAL) VOL 6 NO 4 April 1957

JOZAN, Dezone (Budapest)

Artificial breeding of bee queens. Term tud kozl 6 no.6: 253-257 Je '62.

JOZAN, Dezsone

Mechanism in the world of bees. Elovilag 7 no.3:31-35 My-Je '63.

YOZHEF, Syuch [Jozef, S.]

When metal is lighter than wood. IUn.tekh. 7 no.4:21-24 Ap '63.
(MIRA 16:4)

1. Sotrudnik zhurnalov "Populyarnaya tekhnika" i "Polet".
(Hungary--Airplanes--Wings)

JOSEF, T.; TODOR, J.

Testing the wearability of rubber by radioisotopes. p. 642.

ENERGIA ES ATOMTECHNIKA. (Energiagazdalkodasi Tudomanyos Egyesulet)
Budapest, Hungary
Vol. 11, no.9/10, Sept./Oct. 1958.

Monthly List of East European Accessions (EEAI) LC., Vol. 8, no.7, July 1959
Uncl.

BIALECKI, S.; BOJKO, M.; JOZEFACIUK, D.; LESZEK, H.; MICHALSKI, E.; RUSZCZYNSKA, J.; SARNECKA, D.; WOJCIECHOWSKI, J.

Causes of delayed union and pseudarthrosis of the long bone. Chir. narz. ruchu ortop. polska 26 no.5:597-604 '61.

1. Z Kliniki Ortopedycznej AM w Warszawie Kierownik: prof. dr. A.Gruca.

(FRACTURES UNUNITED etiol) (PSEUDARTHROSIS etiol)

IOZEFAVICHUS, D.I., inzh. [Jozefavicius, D.]

Elimination of nonsymmetry in a network with capacititve current compensation. Elek. sta. 35 no. 4:81-82 Ap '64. (MIRA 17:7)

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P/007/61/000/005/001/004
A076/A026

10.9300

AUTHOR: Józefczak, Stanisław

TITLE: With a Glider Into the Stratosphere - Stanisław Józefczak Writes About His Record Flight

PERIODICAL: Skrzydlata Polska, 1961, No. 5, p. 3

TEXT: The author gives a general account of his high-altitude record flight and of the meteorological conditions, which enable him to reach an altitude of 10.674 m. After being towed to an altitude of 400 m, the Mucha 100 SP-1967 glider entered a 5 - 7 m/sec upward rotor-wave draft carrying him to a 4.000 m altitude. Inside the rotor-wave clouds, the upward and downward drafts registered speeds of +4 to -2.3 g. Minimum choky currents had a speed of 12 m/sec, but could be as high as 20 m/sec. The speed of upward drafts in the first rotary formation reached 7 m/sec making possible the ascent to 5.700 m. At this altitude the rotary upwards draft joined the wavy draft over the Tatra Mountains. Wind velocity reached 80 km/h and its direction was SSW to SW. Holding a southern course, an altitude of 8.500 m was reached by the author over the Tatra Mountains. Leaving the 3 m/sec upward draft, the author flew over the Giewont Mountain where a lens-shaped upward draft carried him to 10.700 m, registered on the glider altimeter. The speed of

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With a Glider Into the Stratosphere - Stanisław Józefczak Writes About His Record Flight

the upward draft at this altitude was 5 m/sec. At 11.100 m the upward-draft speed dropped to 2 m/sec. The highest altitude, 11.400 m, was registered on the glider's altimeter. After breathing pure oxygen the author was forced to land on an airfield in Nowe Targi. No blocking of controls was noted during the flight. Barograph No. VH 4578, range 12, flying time 6 hours. Proceedings of this flight will be submitted to the FAI, reported the ZG APRL Sports Section. There are 3 photographs and 1 graph.

Card 2/2

JOZEFIAK, T.

1

PHASE I BOOK EXPLOITATION POL/5755

Polskie Towarzystwo Matematyczne

Prace matematyczne (Mathematical Transactions) Warsaw, Państwowe Wydawn. Naukowe, 1961. 146 p. (Series: Its: Roczniki. Seria I., [no] 5) 1,150 copies printed.

Editorial Board: Chief Ed.: Władysław Orlicz; Deputy Chief Ed.: Marceli Stark, Adam Bielecki, Witold Bogdanowicz, Stanisław Gołąb, Jerzy Górski, Stanisław Hartman; Secretary: Julian Musielak, Zbigniew Semadeni, Krzysztof Tatarkiewicz.

PURPOSE: This book is intended for mathematicians.

COVERAGE: This is a collection of 14 articles on the theory of functions, theory of numbers, theory of series, functional analysis, differential equations, and their applications to hydrodynamics and thermodynamics. No personalities are mentioned. References follow each article.

Card 1/4

Mathematical Transactions POL/5733

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Mathematical Transactions POL/5733

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[illegible]matical Transactions 151/5733

[illegible] from Scientific Meetings of the Polish Mathematical Society 137

AVAILABLE: Library of Congress

Card 4/4

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JOZEFIAK, T.

On the dimension of the algebra of endomorphisms of a projective module. Bul Ac Pol math 12 no.9:523-526 '64.

1. Institute of Mathematics of the Polish Academy of Sciences, Warsaw. Presented by J. Los.

POL.

621.791.92.003 : 621.914.1

3132

Józefik A., Zieleniowski H. Technical and Economic Indices for Production and Use of Tipped Cutting Tools.

„Wskaźniki techniczne i ekonomiczne produkcji i użytkowania narzędzi napawanych". Przegląd Mechaniczny. No. 8, 1959, pp. 274—276, 5 figs.

On the basis of data obtained from experiments carried out by the Welding Institute over the production of cutting tools and — from the machine Tool and Machining Institute — of research carried out over the performance of tipped tools, the authors have computed technical and economic indices for the production and utilisation of plain milling cutters. These indices are an aid to comparing tipped milling cutters arc-welded by means of ESW-18 electrodes with solid SW-9 high-speed steel milling cutters. A method is suggested for computing and classifying these indices. In summing up the details of this problem, the authors conclude that the mastering of the tipping process will materially contribute towards increasing the performance of tipped tools.

JOZEFIK, A.

"Economizing on steel in the production of average cutters for machine tools." p. 55
(Mechanik, Vol 25 No 2 Feb 53 Warszawa)

SO: Monthly List of East European Accessions, Vol 2 No 9 Library of Congress Sept 53 Uncl

JOZEFIK, A.

"Welded tools." p. 268. (TECHNIKA MOTORYZACYJNA Vol. 4, No. 9, Sept. 1954. Warszawa, Poland)

SO: Monthly List of East European Accessions. (EEAL). LC. Vol. 4, No. 4. April 1955. Uncl.

JOZEFIK, A.; KELLER, B.; [illegible], S.

"Technology of Grinding Polishing Bar[illegible]", p. 296, (MASZYNOWE, Vol. 27, No. 6, June 1954, Warszawa, Poland)

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, No. 5, May 1955, Uncl.

JOZEFIK, A.

JOZEFIK, A. Controlling exactness in the manufacture of cutter edges for machine tools. p. 454.
Vol. 27, no. 11/12, Nov./Dec. 1954.
MECHANIK. Warszawa Poland

SOURCE: East European Accessions List (EEAL) LC Vol. 5, No. 6, June 1956

JOZEFIK, A.

JOZEFIK, A. Device for measuring tension of circumferential surface forces at grinding. p. 508. Vol. 27, no. 11/12, Nov./Dec. 1954. MECHANIK, Warszawa Poland

SOURCE: East European Accessions List (EEAL) LC Vol. 5 no. 6, June 1956

621.9[11.1 : 621.14.06]

Józefik A., Zaleski K. **Recent Investigations Over Hard-Faced Cutters**

„Ostatnie wyniki badań narzędzi napawanych". Mechanik, No. 5, 1955, pp. 159—162, 7 figs., 5 tabs.

A description of investigations over prototypes of end mills of various diameters manufactured under normal industrial conditions, as well as over prototypes of end mills hard-faced with ENS9W electrode of 9% tungsten content. The results of these investigations conducted on a horizontal milling machine have proved that the cutting power of the hard-faced end mills exceeds or at least equals that of homogeneous end mills. Further experiments showed that the best results are obtained when end mills with ENS18W electrode hard-facing are used. When ENS9W electrode hard-facing is applied, the results are much less satisfactory while the lowest cutting power is given by homogeneous end mills. The author recommends the use of ENS9W electrodes for the manufacture of two-flute end mills for Tee-slots.

JOZEFIK, A.

Technical progress in the production of tools with welded elements. p. 8. MECHANIK, Warazawa. Vol. 28, no. 1, Jan. 1955.

SOURCE: East European Acession List (EEAL) Library of Congress
Vol. 5, no. 8, August 1956.

JOZEFIK, Andrzej

Noze do Wysokodajnego Toczenia Metali (Cutting Tools for Efficient Metal Turning). Warsaw, Panstwowe Wydawnictwa Techniczne, 1956. by Andrzej JOZEFIK and Kazimierz ZALESKI.

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JÓZEFIK, A. ; ZALESKI, K.

"Noze do wysokowydajnego toczenia metali" (Tools for high-productive machining of metals), by A. Józefik and K. Zaleski. Reported in New Books (Nowe Ksiązki), No.11, June 1, 1956.

JOZEFIK, A.

JOZEFIK, A. Further improvement in the feasibility of cutting sintered carbides. p. 281. Vol. 29, no. 7, July 1956. MECHANIK, Warszawa, Poland.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

JOZEFIK, A.

New materials for tools and new constructions of cutting tools. (Conclusion) p. 8. (MECHANIK. Poland. Vol. 30, no. 1, Jan. 1957.)

SO: Monthly List of East European Accession (EEAL) LC, Vol. 6, no. 7, July 1957. Uncl.

JOZEFIK, A.

Investigation of the excessive use of sintered carbides in the metallurgic industry. p.35. (MECHANIK. Poland. Vol. 30, no. 1, Jan. 1957)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 7, July 1957, Uncl.

JOZEFIK, A.

Disks of sintered metal oxides for removing stubbles. p. 160. (Mechanik, Vol. 30, No. 4, Apr 1957, Warsaw, Poland)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

JOZEFIK, A.

Some problems concerning the standardization of carbides and carbide-tipped tools.

P. 24. (MECHANIK) (Warszawa, Poland) Vol. 31, no. 1, Jan. 1958

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

JOZEFIK, A.; ZALESKI, K.

Recent results of researches on welded tool elements. p. 180.

MECHANIK. (Stowarzyszenie Inzynierow i Technikow Mechanikow Polskich) Warszawa, Poland. Vol. 4, no. 4, July/Aug. 1959.

Monthly List of East European Accession. (EEAI) LC, Vol. 9, no. 1, Jan. 1960.

Uncl.

JOZEFIK, Andrzej, doc. mgr inz.

Multiedged insertions for composed tools. Mechanik 34 no.10:527-529 '61.

1. Instytut Obrobki Skrawaniem, Krakow.

JOZEFIK, Andrzej

The problem of introducing plates from agglomerated carbides according to indications of the International Standards Organization-29 from the economic standpoint. Mechanik 35 no.2: 103-104 '62.

JOZEFIK, Andrzej; ZALESKI, Kazimierz

Cutting tool holders for multiedged blades.
Mechanik 35 no.8:470 Ag '62.

GIBAS, T.; JOZEFIK, A.; ZALESKI, K.

Products from sintered carbides. Mechanik 35 no.8:469 Ag '62.

JOZEFIK, MIECZYSLAW.

SCIENCE

JOZEFIK, MIECZYSLAW. Z wedrowek po Czaplincach. Warszawa, Panstwowe Wydawn. Naukowe, 1957. 158 p. (Biblioteczka przyrodnicza. Seria zoologiczna)
CU Not in DLC

Monthly List of East European Accessions (EEAI) LC Vol. 8, No. 4
April 1959, Unclass.

JOZEFKA, Antal; POLOSKEI, Laszlone

Hungarian-made leather stuffing agents. Bor cipo 14 no.3: 83-85 My'64.

1. Leather Industry Enterprise (for Jozefka).
2. Research Institute of the Leather Industry (for Poloskei).

JOZEFKA, Antal

Experiences with foreign-made casein-free finishes. Bor cipo 15 no.2:43-45 Mr '65.

1. Leather Industry Enterprise, Budapest.

GALDECKI, Z.; JOZEFOWICZ, E.

Crystal structure of potassium iododiarsenite KAs_4O_6I and some analogous compounds. Acta chim 9:5-24 '64.

1. Department of Inorganic Chemistry of the Lodz Technical University, Submitted 11/1 1962.

KONASZ[illegible], Henryk, [illegible], [illegible]

Kinetics of the reaction between iodine and formates in homogeneous and two-phase liquid systems. Part 1. Chemia Lodz no.14:11-21. '61.

1. Department of Inorganic Chemistry, Technical University, Lodz.

CYSEWSKI, Andrzej; JOZEFOWICZ, Ewald

Coprecipitation reactions of cadmium thiocyanate and cadmium thiocyanatomercurate in the presence of bismuth ions. Chemia Anal no.1:25-31 '64.

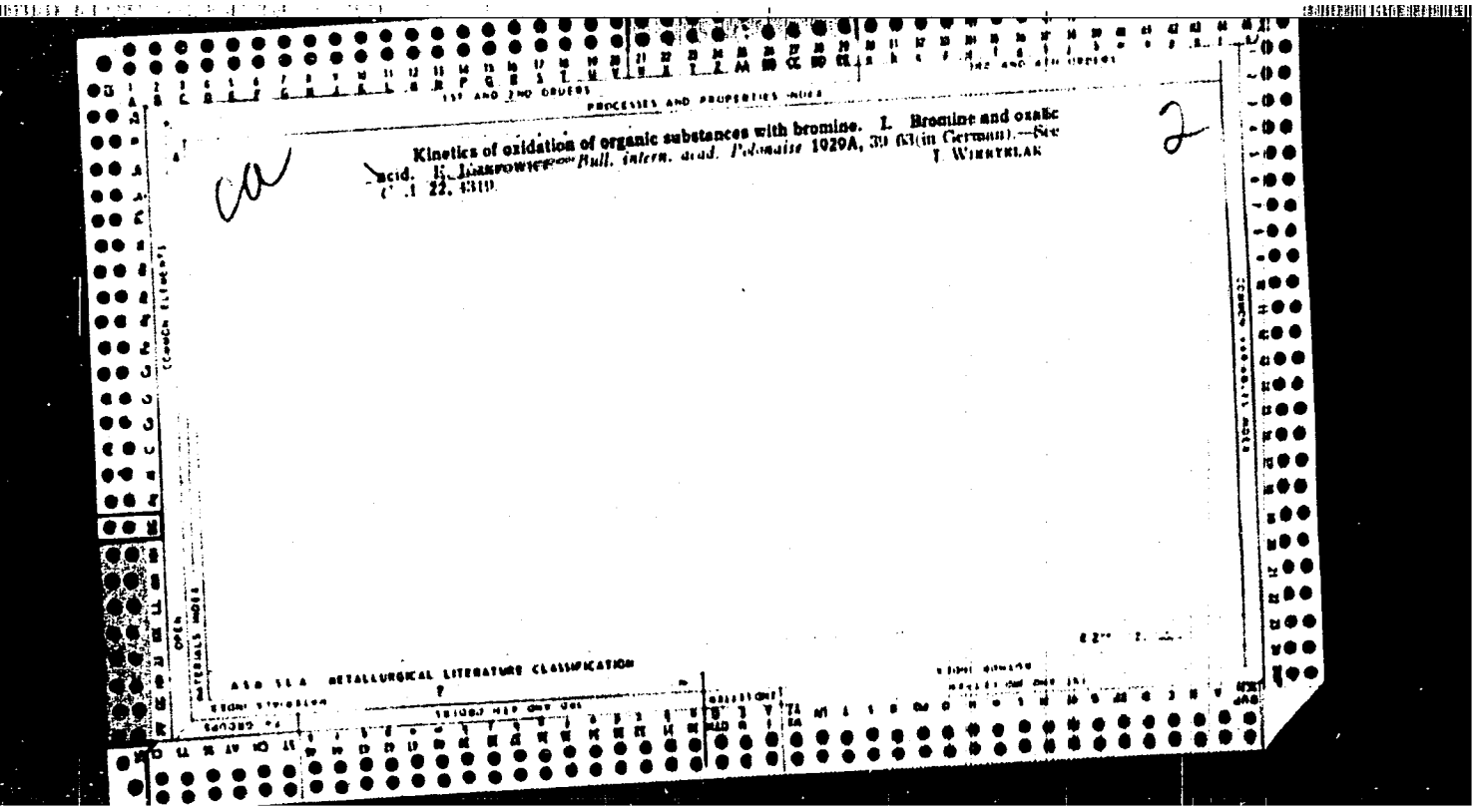
Coprecipitation of thiomercurates with zinc and cobalt thiocyanatomercurates. Ibid.:33-41

1. Department of Inorganic Chemistry, Technical University, Lodz.

JOZEFOWICZ, Edward; MASLOWSKA, Joanna

Ionophoretic investigations of complex formations of ferric and thiocyanate ions in aqueous solutions. Chemia Lodz no. 13: 13-25 '63.

1. Department of Inorganic Chemistry, Technical University, Lodz.



PROCESSES AND PROPERTIES INDEX

Kinetics of oxidation of organic substances with bromine. I. Bromine and oxalic acid. II. [illegible] *Bull. intern. acad. Polonaise* 1929A, 39 63(in German).—See C. A. 22, 4319. T. WIERTELAK

2

A & S I & A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

Kinetics of the reversible reaction between arsenious acid and iodine. Edward Józefowicz. *Rocznikі Chem.* 12, 441-60(1932).—A general method of investigation of kinetics of reversible, especially unsym., reactions is outlined. The validity of Roebuck's equations for both the equil. and the velocity consts. was confirmed in the reaction between H_3AsO_3 and I in the presence of an excess of HI at 25°. The heat of this reaction is −1640 g. cal., that of $I_3^- \longrightarrow I^- + I_2$ is −4300 g. cal., and of $I_2 + H_2O \longrightarrow HIO + H^+ + I^-$ is −23,200 g. cal.

I. Wiertelak

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

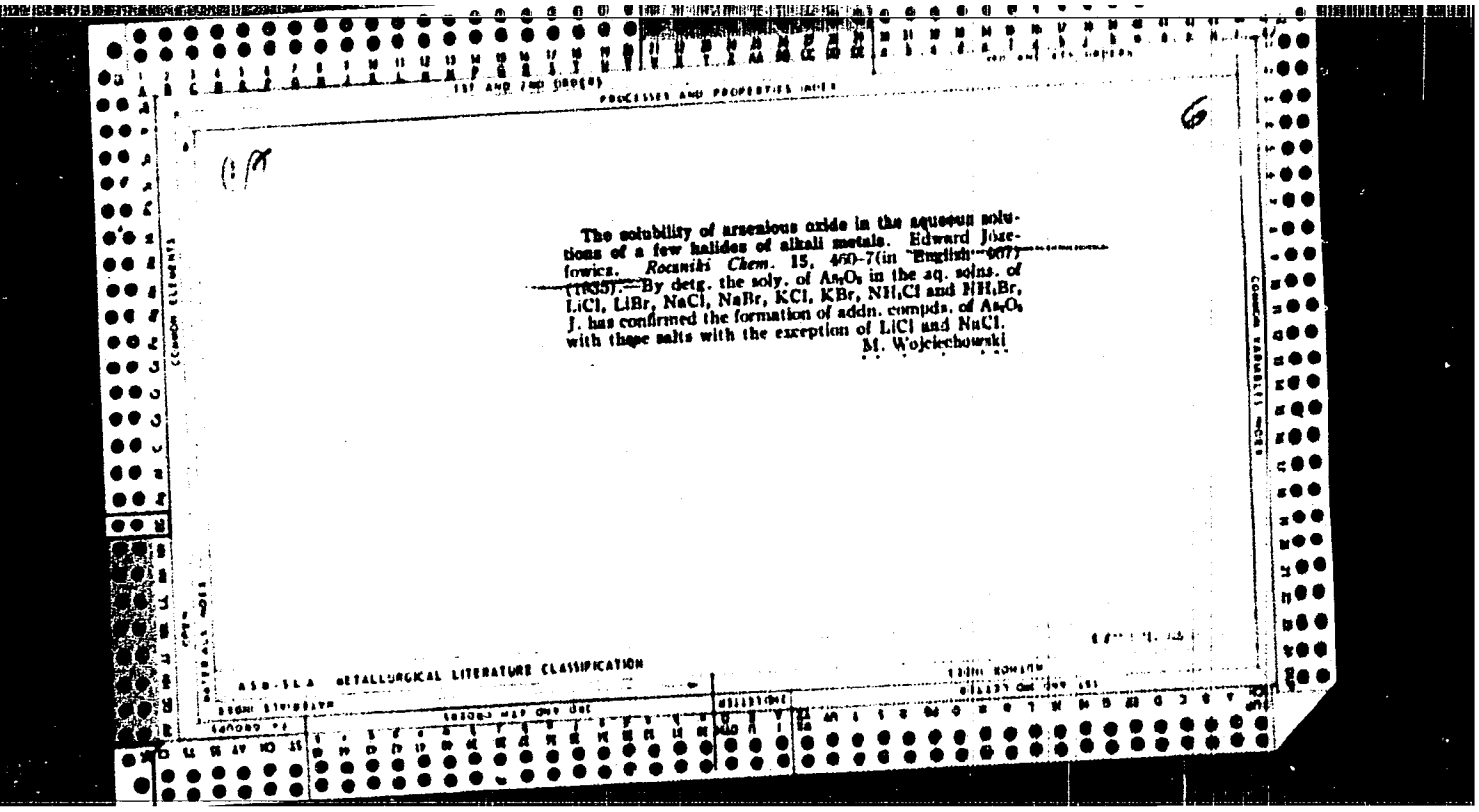
PROCESSES AND PROPERTIES INDEX

CA 2

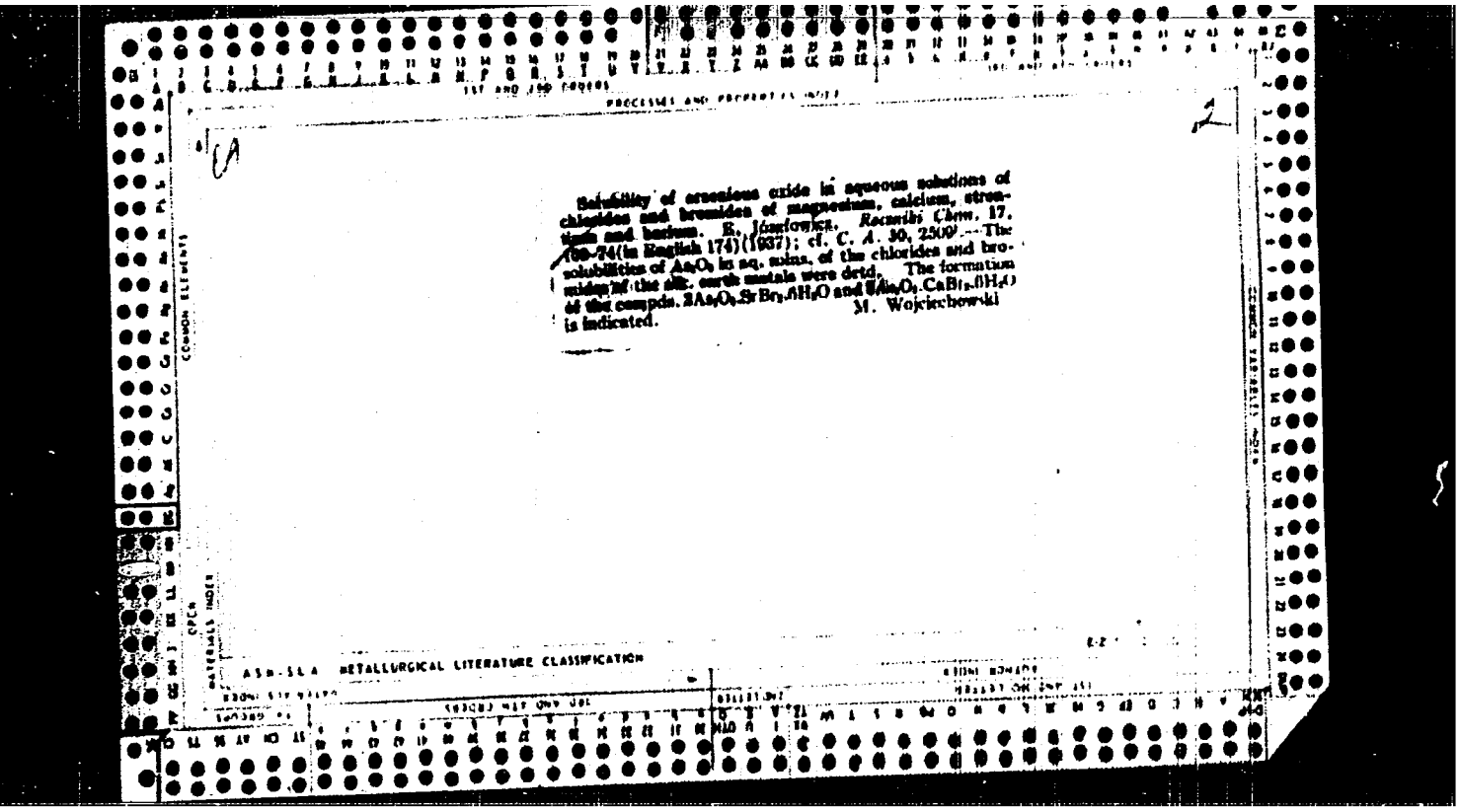
Kinetics of reaction between arsenious acid and iodine. II. Influence of neutral salts on velocity of reaction and equilibrium point. E. Józefowicz. *Roczniki Chem.* 12, 787-98(1932); cf. *C. A.* 27, 2874.—K, Na, Li, Ba, Sr, Ca and Mg chlorides and bromides (0.5-3 *N*) and $NaNO_3$ and KNO_3 considerably reduce the velocity of oxidation of H_3AsO_3 by I_2 and slightly augment that of oxidation of HI by H_3AsO_4, thereby shifting the equil. point in the direction of H_3AsO_3 formation. This effect is due to reversal of the reaction $I_2 + H_2O \rightleftharpoons HOI + HI$ in the presence of neutral salts.

R. C. A.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



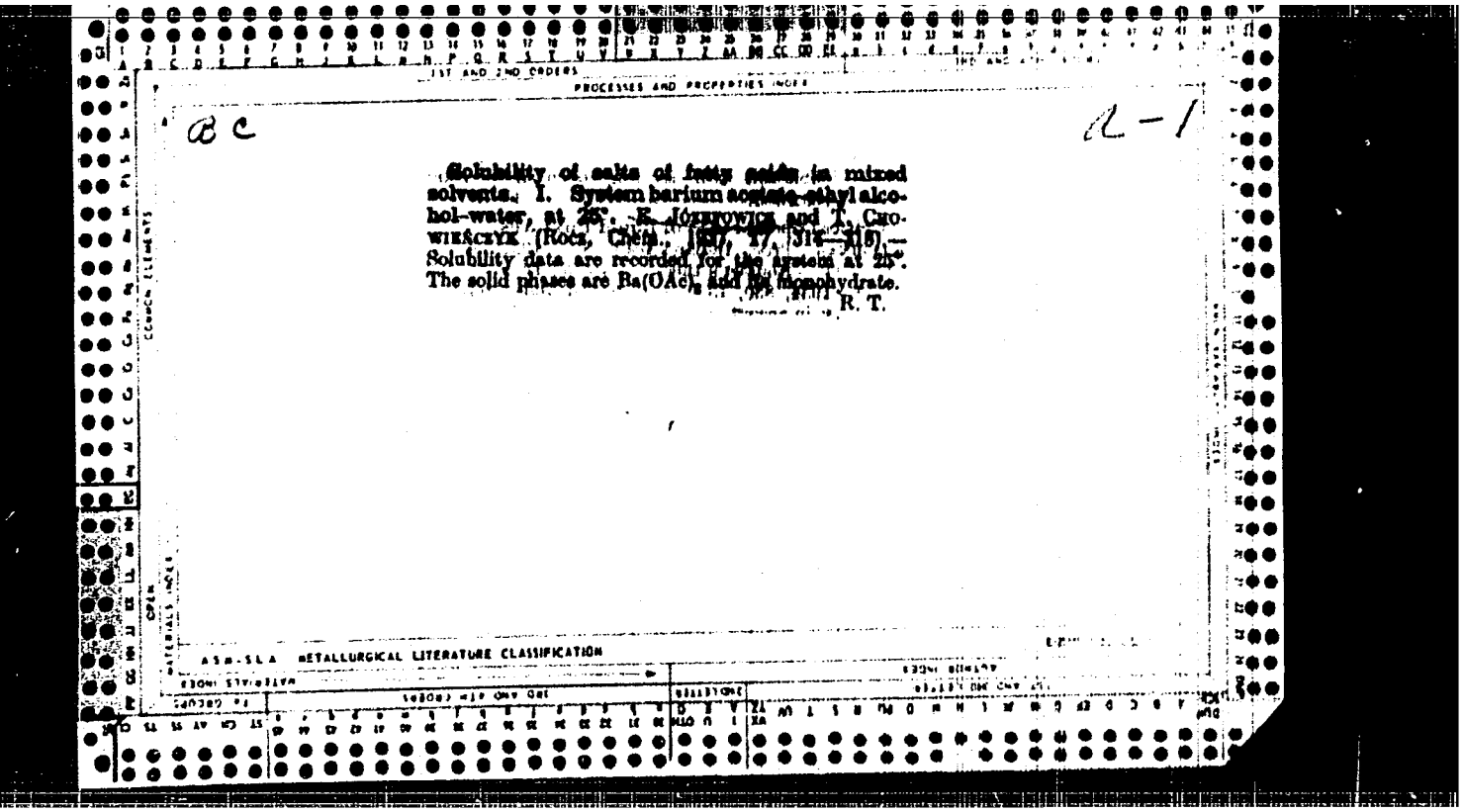
The solubility of arsenious oxide in the aqueous solutions of a few halides of alkali metals. Edward Jóźefowicz. *Rocznikі Chem.* 15, 460-7(in English 467) (1935).—By detg. the soly. of As_2O_3 in the aq. solns. of LiCl, LiBr, NaCl, NaBr, KCl, KBr, NH_4Cl and NH_4Br, J. has confirmed the formation of addn. compds. of As_2O_3 with these salts with the exception of LiCl and NaCl.
M. Wojciechowski



Solubility of arsenious oxide in aqueous solutions of chlorides and bromides of magnesium, calcium, strontium and barium. E. Jaworska. *Roczniki Chem.* 17, 169-74(in English 174)(1937); cf. *C. A.* 30, 2509.—The solubilities of As_2O_3 in aq. solns. of the chlorides and bromides of the alk. earth metals were detd. The formation of the compds. $2As_2O_3.SrBr_2.4H_2O$ and $5As_2O_3.CaBr_2.6H_2O$ is indicated.

M. Wojciechowski

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

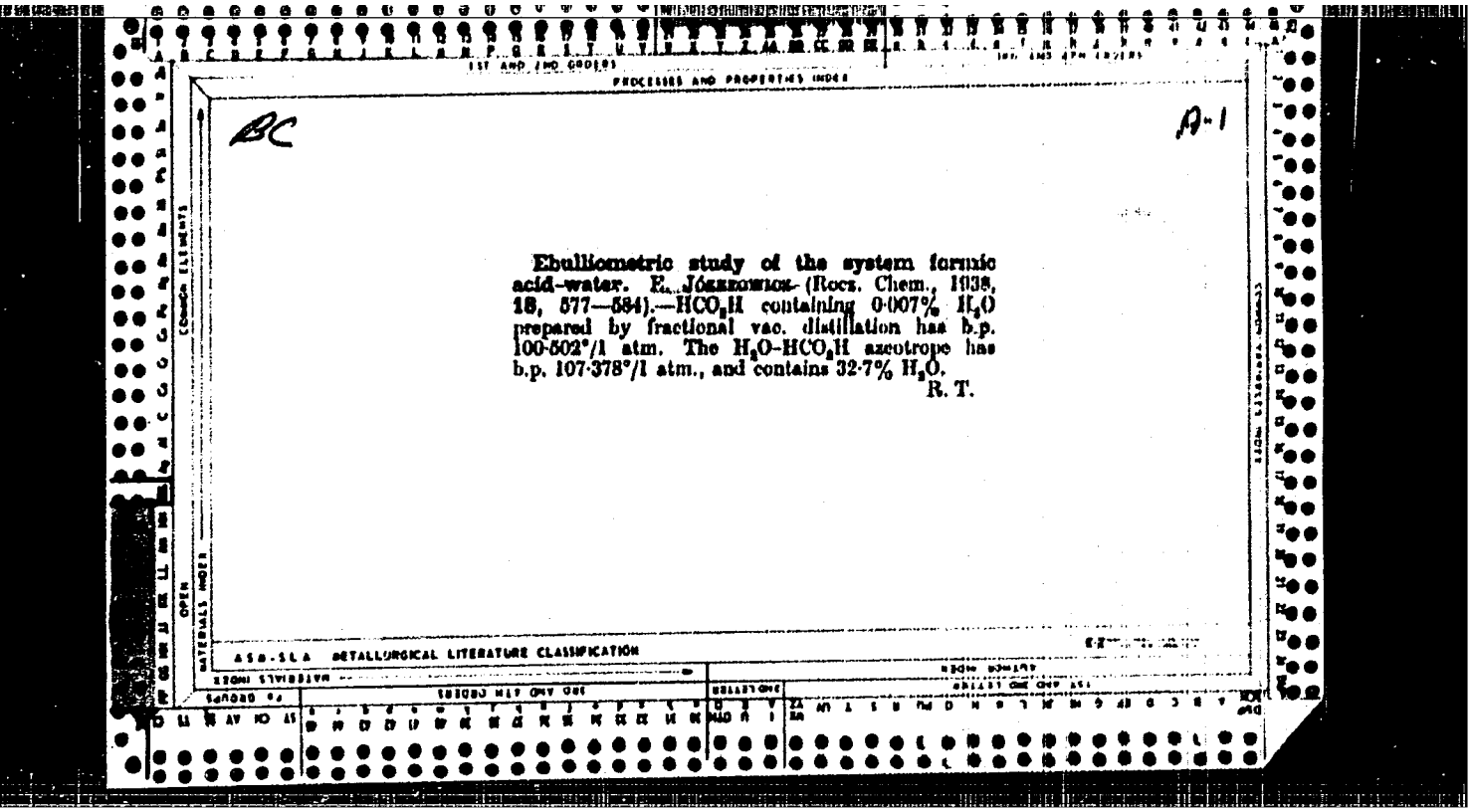
a c

a-1

Solubility of salts of fatty acids in mixed solvents. I. System barium acetate-ethyl alcohol-water, at 25°. K. Jóźkowicz and T. Chowieńczyk (Roczn. Chem., 1937, 17, 315—318).—Solubility data are recorded for the system at 25°. The solid phases are $Ba(OAc)_2$ and its monohydrate.

R. T.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

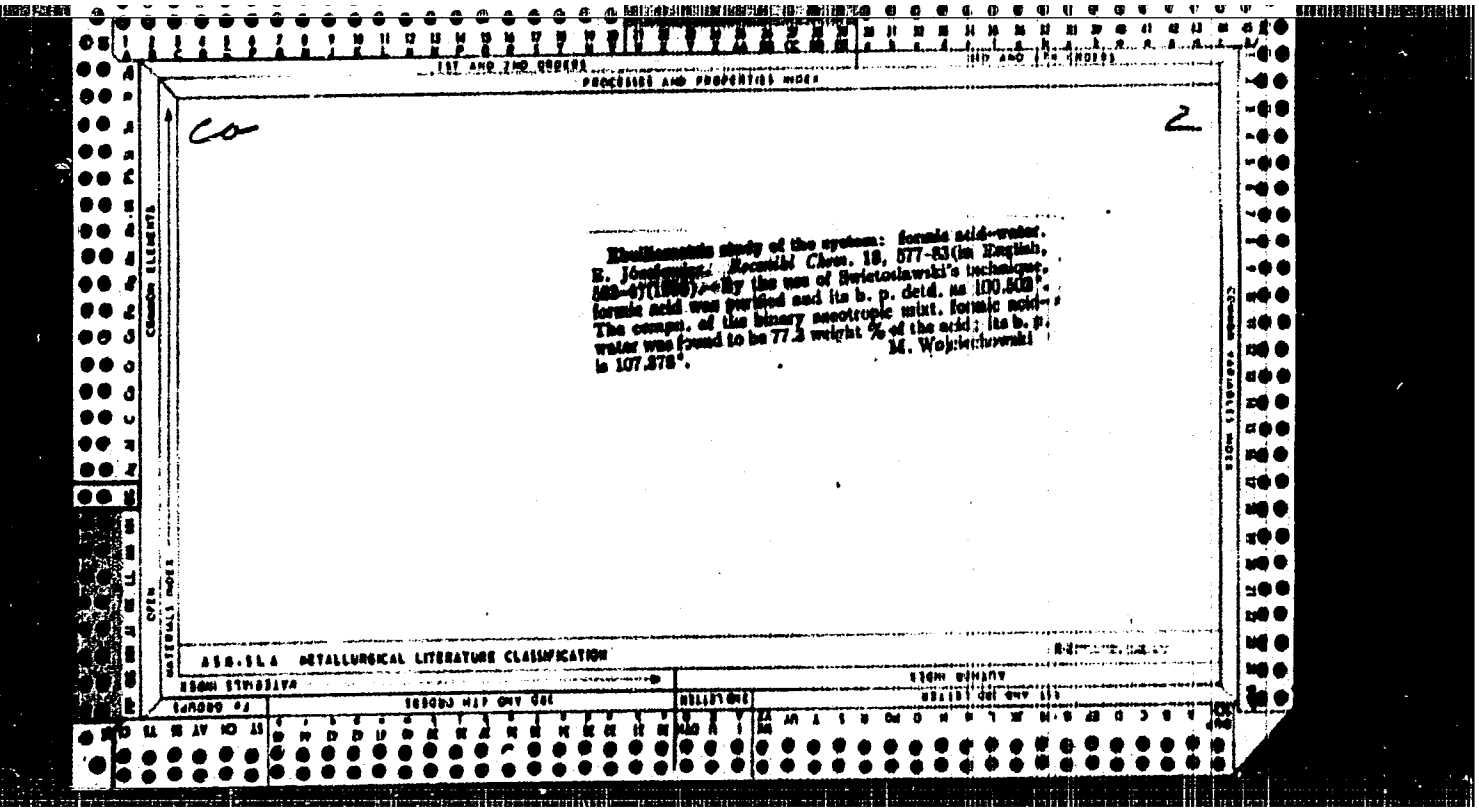


BC

A-1

Ebulliometric study of the system formic acid–water. E. Jószensics (Rocz. Chem., 1938, 18, 577—584).—HCO_2H containing 0·007% H_2O prepared by fractional vac. distillation has b.p. 100·502°/1 atm. The H_2O–HCO_2H azeotrope has b.p. 107·378°/1 atm., and contains 32·7% H_2O.

R. T.



Co

2

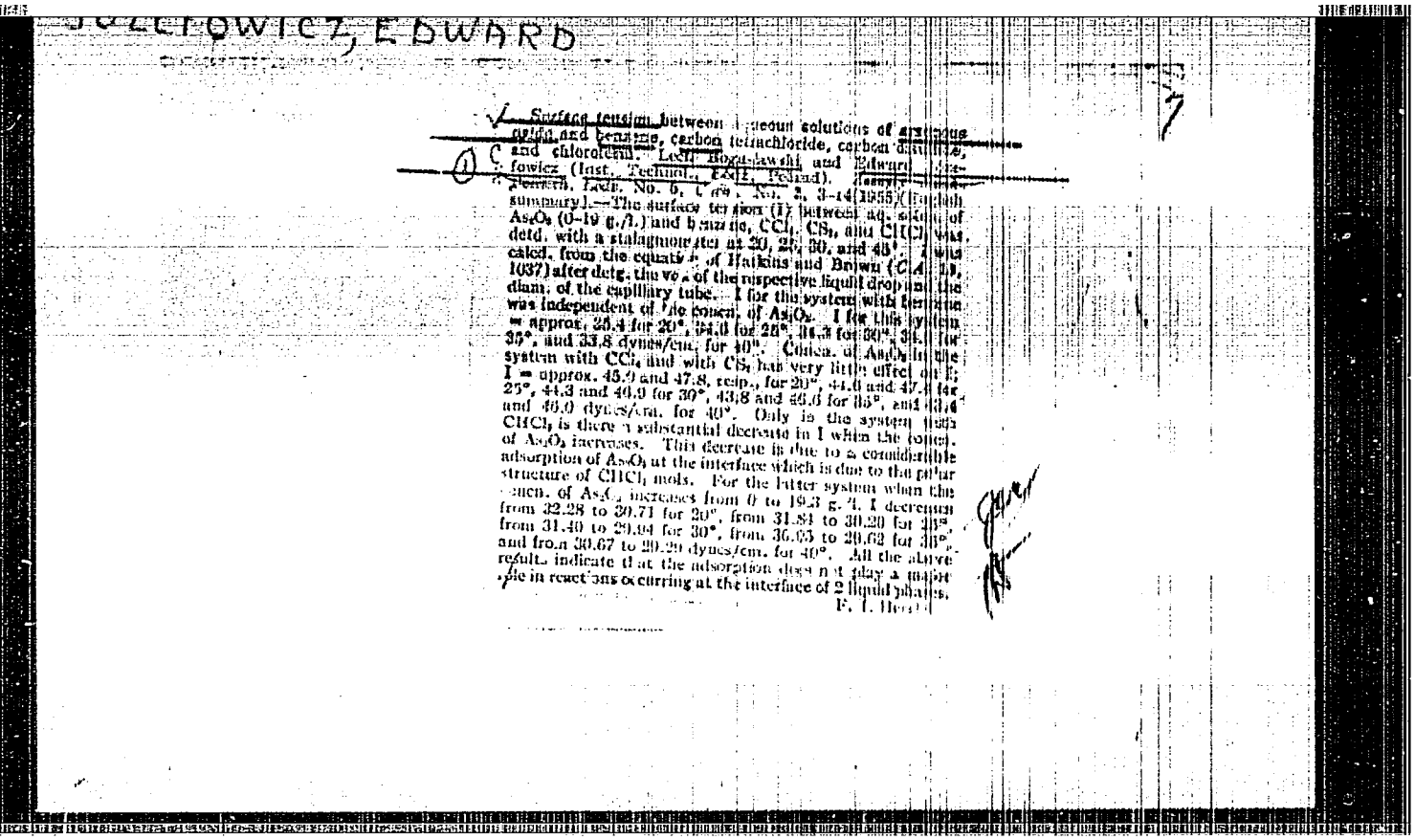
Ebulliometric study of the system: formic acid–water. E. Jönsson. *Recueil Chim.* 18, 577-83(in English, 583-97(1899).—By the use of Swietoslawski's technique, formic acid was purified and its b. p. detd. as 100.800°. The compn. of the binary azeotropic mixt. formic acid–water was found to be 77.5 weight % of the acid; its b. p. is 107.378°. M. Wojciechowski

ASS-SLA METALLURGICAL LITERATURE CLASSIFICATION

JOZEFOWICZ, [redacted]. E.

Solubility of arsenious oxide in aqueous solutions of electrolytes. E. Jozefowicz, S. Wickowa, and W. Zubranska (Roczn. Chem., 1950, 24, 64—76).—The solubility of As_2O_3 is investigated in aq. solutions of halides, nitrates, and sulphates of NH_4 and of alkali and alkaline-earth metals. The plot of log solubility of As_2O_3 against concn. of added electrolyte is not linear as it should be if the theory of Debye and McAulay were valid in this case. The experimental data may be expressed by an empirical formula $\log S = \log S_0 + ac - bc^2$; where S is the solubility of As_2O_3 for a given concn. of electrolyte, S_0 the solubility of As_2O_3 in pure solvent, c the concn. of electrolyte, and a and b are empirical constants. Values of a and b for different salts are given. In the case of nitrates and sulphates the empirical formula $\log S = \log S_0 + ac - bc^n$, where n is < 2, may be applied only up to the concn. 2—2·5N. The simplifying assumptions of Debye and McAulay are no longer valid for more complicated ions. The deforming effect of the electrolyte ions on the mol. of the non-ionic solute and the solvent is more pronounced in this case because of their dipolar structure.

S. M. [illegible]



JOZEFOWICZ, EDWARD

Surface tension between aqueous solutions of arsenious oxide and benzene, carbon tetrachloride, carbon disulfide, and chloroform. Lesz. Bogusławski and Edward Jozefowicz (Inst. Technol., Łódź, Poland). Zeszyty Nauk. Łódz. No. 6, Chem., No. 2, 3-14(1955)(English summary).—The surface tension (I) between aq. solns. of As_2O_3 (0-19 g./l.) and benzene, CCl_4, CS_2, and $CHCl_3$ was detd. with a stalagmometer at 20, 25, 30, and 40°. I was calcd. from the equation of Harkins and Brown (C.A. 13, 1037) after detg. the vol. of the respective liquid drops and the diam. of the capillary tube. I for the system with benzene was independent of the concn. of As_2O_3. I for this system = approx. 26.4 for 20°, 24.0 for 25°, 31.3 for 30°, 31.[illegible] for 35°, and 33.8 dynes/cm. for 40°. Concn. of As_2O_3 in the system with CCl_4 and with CS_2 has very little effect on I; I = approx. 45.9 and 47.8, resp., for 20°, 44.0 and 47.[illegible] for 25°, 44.3 and 46.9 for 30°, 43.8 and 46.6 for 35°, and 43.[illegible] and 46.0 dynes/cm. for 40°. Only in the system with $CHCl_3$ is there a substantial decrease in I when the concn. of As_2O_3 increases. This decrease is due to a considerable adsorption of As_2O_3 at the interface which is due to the polar structure of $CHCl_3$ mols. For the latter system when the concn. of As_2O_3 increases from 0 to 19.3 g./l. I decreases from 32.28 to 20.71 for 20°, from 31.84 to 30.20 for 25°, from 31.40 to 29.94 for 30°, from 36.95 to 29.62 for 35°, and from 30.67 to 29.29 dynes/cm. for 40°. All the above results indicate that the adsorption does not play a major role in reactions occurring at the interface of 2 liquid phases.

F. L. Usey

Jozefowicz, Edward

5

Compounds of arsenious oxide with some alkali halides. I. Cryometric [illegible]. Edward Jozefowicz and Tadeusz Witek (Univ. Techn., [illegible]). *Chem.* 22, [illegible] (English Summary).—The b.p. elevating of the following aq. solns. was detd.: As_2O_3 (I) (up to over 25 g. per kg. H_2O), KCl (up to over 3 molal), KBr (up to 1.8 molal), KI (up to 1.3 molal), NaCl (up to 2 molal), NH_4Cl (up to 1.3 molal), and finally of mixed solns. contg. I and each of the above salts in various proportions. In solns. with NaCl and NH_4Cl the observed drop, Δt, could be calcd. additively from their compns., whereas solns. with all 3 K halides showed marked neg. deviations from additivity. These deviations were considered evidence for complex formation between the solutes. II. Ebullioscopic measurements. Edward Jozefowicz and Zdzisław Gałecki. *Ibid.* 253 8.—The b.p. elevation of the following solns. was detd.: As_2O_3 (I) (up to over 18 g. per 1 kg. H_2O), KCl (up to 4.5 molal), KBr (up to 3.5 molal), NaCl (up to 4 molal), NH_4Cl (up to 5 molal) as well as of solns. contg. I and each of the above salts in various proportions. In all cases the b.p. elevation could be calcd. additively from the compns. within exptl. error. This was considered evidence of complete absence of compn. at the b.p., of complexes formed by I with some of the K halides.

JOZEFOWICZ, E.

Witek, T. Compounds of arsenious oxide with some alkali halides. II. Ebullioscopic measurement. p. 253.
ROCZNIKI CHEMI, Warszawa, Vol. 29, no. 2/3, 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

JOZEFOWICZ, EDWARD

POLAND/Inorganic Chemistry - Complex Compounds C.

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 4092

Author : Jozefowicz Edward, Kaminski Wieslaw
Title : Compounds of Arsenic Trioxide with Some Alkali Metal Halides. III. Effect of Arsenic Trioxide on Conductance of Solutions of Halides of Potassium and Ammonium

Orig Pub : Roczn. chem., 1956, 30, No 1, 3-9

Abstract : A decrease in specific conductivity of solutions of KCl and KBr in the presence of arsenous acid has been ascertained. This phenomenon is attributed to the formation of complex compounds, which is in accord with the results of cryoscopic determinations. Conductivity of solutions of KI and NH_4Cl, which do not form complex compounds with As_2O_3, is not changed.

Part II, see RZhKhim, 1956, 12633.

Card 1/1 -10-

85441

P/046/60/005/004/001/007
A222/A026

21.5200
26.2244

AUTHORS: Mikke, Kazimierz; Adamski, Lesław; Józefowicz, Edward T.

TITLE: Scintillation Crystals of the ZnS (Ag) - Paraffin Type for Fast Neutrons

PERIODICAL: Nukleonika, 1960, Vol. 5, No. 4, pp. 181 - 189

TEXT: The authors worked out a method of producing ZnS(Ag)-paraffin type scintillation crystals for fast neutron detection, they established optimum composition and thickness of the crystals and measured the rate of neutron detection and discrimination of gamma radiation. The article states that the so-called Hornyak button so far is the most efficient fast neutron detector. The Hornyak button contains silver-activated zinc sulphide suspended in methyl polymetacrylate. Among other organic compounds paraffin was tested as a suspension medium. Recording of fast neutrons in such a system is possible due to recoil neutrons, knocked out from the organic material, which induce scintillation in zinc sulfide. At the same time, zinc sulfide has little sensitivity to gamma radiation. The use of paraffin as a medium containing hydrogen makes possible a fast and simple production of optionally dimensioned scintillation crystals. Silver-activated zinc

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Scintillation Crystals of the ZnS (Ag) - Paraffin Type for Fast Neutrons

sulfide (Dr. Stamm - Nr. 211) was used as luminophore. The granules were of the size 2 - 15μ. Scintillation crystals were made as follows: molten paraffin was mixed with an adequate quantity of zinc sulfide poured into a cylinder-shaped mold and pressed by means of a piston. To avoid precipitation of ZnS, the mold was subjected to vibration until the paraffin solidified. The crystals were then extruded by means of a threaded counterpiston; the product had a diameter of 40 mm and was up to 30 mm thick. A fluorescent mercury lamp shaded with a Wood filter was used to check the uniformity of ZnS distribution in paraffin. The crystals were tested by means of a Soviet LAS single-channel analyzer using a gamma scintillation head with a photomultiplier type FEU-19 M. A layer of paraffin oil was introduced between the scintillation head and the crystal to ensure a good optical contact. In all tests a Po - Be neutron source with an output of 7.8 x x 10^5 n/sec $\pm$ 10% was used. Correction for Polonium decay ($T_{1/2}$ = 138.4 days) was considered in the calculus. 64μc of Radium ($\pm$ 10%) constituted the source of gamma photons. In the end stage, a strong gamma source (108 mc of Radium) was used to test the gamma discrimination capability of the crystal. In the crystal-quality checks, integer curves were established of recorded neutrons and

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A222/A026

Scintillation Crystals of the ZnS (Ag) - Paraffin Type for Fast Neutrons

photons in dependency on the discrimination voltage. Thanks to different curve slopes, the discrimination voltage may be adjusted so as to make the system efficiently record neutrons and practically cut off gamma photons. Photomultiplier voltage and amplification of the system were selected in such a way that the straight section of the neutron discrimination curve was located within the applied voltage range, and pulses originated by gamma photons were fully discriminated at about half that range. Preliminary tests were concerned with scintillation crystals containing 20, 30, 40, 50, 60 and 70% by weight of zinc sulfide respectively and showed maximum efficiency in crystals 3 - 4 mm thick at a 50 - 60% ZnS content. Final tests were focused on a 3.8 mm thick crystal containing 50% ZnS. In a heavy discrimination test, a gamma radiation source was used which irradiated the crystal with about 20 r/h. Under such conditions, the crystal recorded fast neutrons with an efficiency of 0.5% and practically did not respond to gamma radiation. Comparison of the ZnS-p crystal with the British-made scintillation crystal NE-450 (16 mm thick, 38 mm in diameter, made by "Nuclear Enterprises") and the Soviet crystal B (6mm thick, 40 mm in diameter), which is part of the neutron monitor RN-3, showed a neutron recording efficiency of 0.96% for the NE-450 crystal,

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Scintillation Crystals of the ZnS (Ag) - Paraffin Type for Fast Neutrons

1.27% for the B crystal and 1.38% for the ZnS-p crystal, all at a neutron-to-gamma detection ratio of 1,000. Other properties of paraffin scintillation crystals are: mechanical strength lower than that of methyl polymetacrylate, worse surface polish, higher anisotropy of efficiency due to reduced thickness (3.8 instead of 6 or 16 mm), and simple production, which does not require high pressures or temperatures. There are 7 figures and 6 non-Soviet references.

ASSOCIATION: Instytut Badań Jądrowych, Warszawa, Zakład Inżynierii Reaktorowej (Institute of Nuclear Research, Warsaw, Department of Reactor Engineering)

SUBMITTED: February, 1960

Card 4/4

JOZEFOWICZ, E.

27315
P/046/60/005/011/004/018
D249/D303

21.6000

AUTHOR: Józefowi[illegible], Edward T.

TITLE: Absolute measurement of β-activity in a liquid scintillator

PERIODICAL: Nukleonika, v. 5, no. 11, 1960, 713 - 717

TEXT: A liquid scintillator is described, consisting of a solution containing 4 g of p-terphenyl per liter of toluene or xylene which allows an absolute measurement of β-activity. Liquid scintillators have the advantage of avoiding all absorption and scattering corrections, since the sample is [illegible] a homogeneous medium with the detector, but difficulties may arise due to insolubility and quenching effects. The scintillator possesses a high light efficiency and the concentration of p-terphenyl used lies in the region where the plot of pulse height vs. concentration has a very flat maximum. The pulse height appeared to be independent of solvent purity and was slightly decreased, rather than increased, by the presence of

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27315
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D249/D303

Absolute measurement of ...

POPOP in the solution when Russian ФЭУ photo-multipliers were used. Tri-butyl phosphate, (the active material in most cases), irradiated to obtain ^{32}P which emits β-particles with an energy of ~1.7 MeV, was found to have no effect on the pulse height when added to the scintillator in small amounts. Glass or plastic vessels 20 mm tall and 10 mm in diameter were employed, containing 5 ml. of the scintillator with 10-100 mg of the active sample. On this scale, the pulse height did not vary with the volume of the scintillator and the background was low. The vessel was placed on a photomultiplier, on a film of paraffin oil to ensure good optical contact and was surrounded by a reflector. Both the scintillator and photomultiplier were enclosed in a light-tight camera box to allow the scintillator to be changed without disconnecting the H.T. source, and to avoid phosphorescence of the photomultiplier glass. Conventional electronic equipment was used. Counting rates were measured for various voltages across the photomultiplier, with and without the active sample. After correcting for the background and noise, the curves obtained proved to be nearly linear and could

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Absolute measurement of ...

easily be extrapolated to the zero-point of discrimination with an error of $< \pm 1$ % in most cases. The intercept corresponds to the absolute number of β-decays occurring in the system, and the errors due to decays in the extreme layer of the scintillator are eliminated by extrapolation. The author points out that (1) for low H.T. ($\sim$700 v) the bias curves are steep and bent down in the region of 0 - 2 v, due to a poor accuracy of discrimination, and (2) deviations may occur in the bias curves in the region of high noise level, owing to an inaccurate determination of the noise level and to secondary effects. Despite these two effects, the method is believed to be very useful for the assessment of nearly all β-emitters, except possibly those with low maximum energy. The activity of ^{24}Na was measured successfully with this instrument and work is continued on various elements important in evaluating active neutron flux by the activation method. The author expresses his gratitude to K. Mikki for suggesting this investigation, and to K. Józefowicz, S. Malewski and L. Adamski for practical assistance. There are 2 figures, and 6 non-Soviet-bloc references. The 4 most

Card 3/4

27315
P/046/60/005/011/004/018
D249/D303

Absolute measurement of ...

recent references to English-language publications read as follows: C.G. Bell, Jr., F.N. Hayes, Ed: "Liquid Scintillation Counting". Proceedings of a Conference held at Northwestern University, August 20-22, 1957, Pergamon Press, 1958; F.N. Hayes, ibid, p. 87; V.N. Kerr, F.N. Hayes, and D.G. Ott, Intern. J. Appl. Rad. Isotopes, 1, 284, 1957; R.C. Axtmann, LeConte Cathey, ibid., 4, 261, 1959.

ASSOCIATION: Institute of Nuclear Research, Warsaw, Reactor Engineering Department

SUBMITTED: September, 1960

Card 4/4

- JOZEFOWICZ, Edward T.

Absolute neutron density measurements in the WWR-S "Ewa" reactor at Swierk. Nukleonika 5 no.12:855-862'60.

1. Institute of Nuclear Research, Warszawa, Reactor Engineering Department.

S/081/62/000/023/008/120
B149/B186

AUTHORS: Józefowicz Edward, Sołoniewicz, Rajmund

TITLE: Investigations of hydrolysis of sulfur oxichlorides. I. Kinetics of sulfuryl chloride hydrolysis

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 82, abstract 23B589 (Roczn. chem., v. 35, no. 5, 1961, 1391 - 1398 [Pol.; Summaries in Russ. and Eng.])

TEXT: Hydrolysis of SO_2Cl_2 was investigated in a system of water and SO_2Cl_2 solution in CCl_4, separated by a permanent interface. The reaction rate is approximately described by a linear equation. The dependence of the rate constant k on the acidity of the aqueous layer is represented by the empirical equation (25°C) $\log k = 0.22\ pH - 3.478$. The influence of temperature is expressed by the Arrhenius equation:

$k = 1.02 \cdot 10^3 \exp(-8570/RT)$. A reaction mechanism is proposed with a limiting stage: (SO_2Cl_2) ads. + OH^- = $SO_3Cl + H^+ + Cl^-$, occuring at the

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S/081/62/000/023/008/120
B149/B186

Investigations of hydrolysis ...

the interface of the two liquid phases. [Abstracter's note: Complete translation.]

Card 2/2

JOZEFOWICZ, Edward

Studies on the mechanism of the hydrolysis of sulfur oxychlorides.
Rocz chemii 37 no.4:489-493 '63.

1. Department of Inorganic Chemistry, Technical University, Lodz.

JOZEFOWICZ, Edward

POLAND

CYGANSKI, Andrzej; JOZEFOWICZ, Edward

Department of Inorganic Chemistry, Lodz Polytechnic School (Zaklad Chemii Nieorganicznej Politechniki, Lodz)

Warsaw, Chemia analityczna, No 5, 1963, pp 673-78.

"Detection and Determination of Bismuth Using Coprecipitation Reaction with Lead Thiocyanate".

CYGANSKI, Andrzej; JOZEFOWICZ, Edward

Detection and determination of bismuth by coprecipitation reaction with lead thiocyanate. Chem anal 8 no.5:671-678 '63.

1. Department of Inorganic Chemistry, Polytechnic, Gdansk.

JOZEFOWICZ, Edward T.

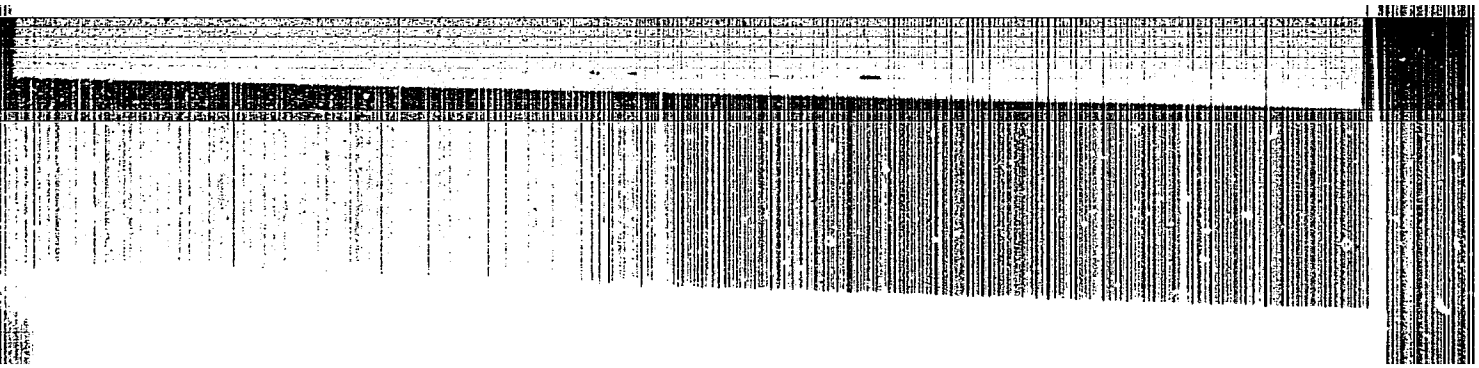
Absolute thermal neutron density measurements by the activation method using liquid scintillators. Nukleonika 8 no.7:429-435 '63.

1. Department of Reactor Physics, Institute of Nuclear Research, Warszawa-Swierk.

JOZEFOWICZ, Edward T.

Thermal neutron activation cross section of some nuclides used in activation measurements. Nukleonika 8 no.7:437-441 '63.

1. Department of Reactor Physics, Institute of Nuclear Research, Warszawa-Swierk.



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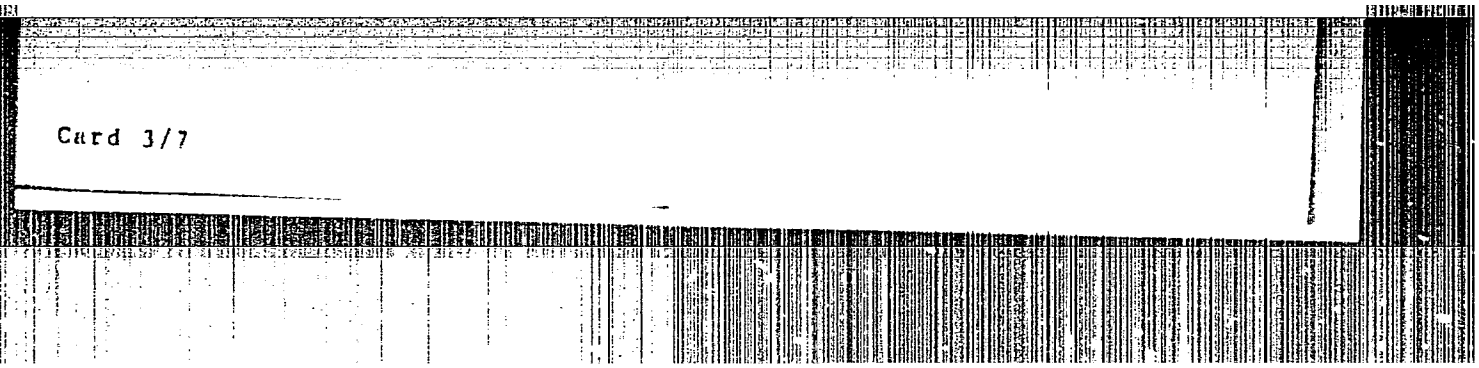

JOZEFOWICZ, Grazyna; SZARAPINSKA, Jadwiga; SZWEMBERG, Janina

Studieson the green plaqye on children's teeth. Czas. stomat. 18 no. 12: 1377-1378 D '65.

1. Z Zakladu Stomatologii Zachowawczej AM w Lodzi (Kierownik: prof. dr. M. Fuchs) i z Zakladu Bakteriologii AM w Lodzi (Kierownik: doc. dr. med. A. Ganczarski).

ADAMSKI, Leslaw; BOUZYK, Jacek; JOZEFOWICZ, Krystyna

Determination of small quantities of sodium and potassium by the method of neutron activation. Nukleonika 5 no.6:317-327 '60.

1. Instytut Badan Jadrowych PAN, Warszawa, Zaklad Inzynierii Reaktorowej.

[redacted]

27155 P/046/60/005/010/004/009
D246/D302

AUTHORS: Józefowicz, Krystyna and Adamski, Lesław

TITLE: Determination of impurities in the WWR-S reactor cooling water using γ-spectroscopy

PERIODICAL: Nukleonika, v. 5, no. 10, 1960, 617-628

TEXT: In order to enable an early detection of the failure of the fuel element or a change to be made in the corrosion rate during the operation of the WWR-S EWA reactor, it is necessary to follow the purity of the water used as coolant. Any impurities on being bombarded with neutrons will form β and γ emitting isotopes. The isotopes are identified by separating them into the major analytical groups followed by scintillation spectroscopy and are confirmed by determining the rate of decay for the individual γ lines, the age of the sample ranging from 8 sec. to 6 months. Only γ activity was considered; pure β emitters were disregarded. The following equipment was used in the experimental work: single channel amplitude analyzer, LAS-"Boksan" (for total activity); a hundred channel amplitude analyzer AI-100 "Raduga" (for spectro-

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scopic analysis); a photo-multiplier FEU-29; a Hilger NAI(Tl) scintillation crystal. The γ-spectra were observed in three regions—0.05-1.8 MeV, 0.1-3.0 MeV and 0.3-8.0 MeV. After separation of the nuclides into analytical groups, each group had only a few active isotopes. The γ-spectra of the short-lived isotopes were marked by the strong ^{24}Na spectrum. To overcome this, a fast separation of Na from all the others had to be obtained. This was done by precipitating other metals with H_2S and OH^-, after the addition of carriers. Total γ-activity was measured by pumping the reactor water, thereby causing it to flow around the scintillating crystal at a constant rate. In this way, the age of the water sample in the vicinity of the crystal was kept constant (8 - 10 sec.). The decay of activity at time intervals of 10 sec. - 7 min. was also recorded. All radio isotopes thus detected are given in Table 2, where their corresponding γ-line energy, the most probable reaction producing them and the origin of the primary isotope are also quoted.

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Determination of impurities... 27155 P/046/60/005/010/004/009
D246/D302

Radionuclides identified in the reactor cooling water

Nuclide	$T_{1/2}$	Energy MeV	Reaction	Origin
^{16}N	7.35 s	6.13, 7.11	^{16}O (n, p)	water
^{19}O	27.0 s	0.20	^{18}O (n, γ)	water
^{28}Al	2.31 m	1.78	^{27}Al (n, γ)	aluminium
^{27}Mg	9.51 m	1.01	^{26}Mg (n, γ)	aluminium
^{65}Ni	2.56 h	1.49	^{64}Ni (n, γ)	steel
^{56}Mn	2.58 h	0.84, 1.81, 2.09	^{55}Mn (n, γ)	steel
^{64}Cu	12.8 h	0.51 (annih.)	^{63}Cu (n, γ)	aluminium and steel
^{24}Na	15.0 h	1.37, 2.75	^{23}Na (n, γ) ^{27}Al (n, α)	water aluminium
^{51}Cr	27.8 d	0.32	^{50}Cr (n, γ)	steel
^{59}Fe	45.1 d	1.10, 1.29	^{58}Fe (n, γ)	steel
^{124}Sb	60.0 d	0.60, 0.72, 1.69, 2.10	^{123}Sb (n, γ)	bearing alloy
^{65}Zn	245 d	1.12	^{64}Zn (n, γ)	aluminium
^{54}Mn	291 d	0.84	^{54}Fe (n, p)	steel
^{60}Co	5.27 y	1.17, 1.33	^{59}Co (n, γ)	steel

Table 2

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After 10 sec. of decay the γ lines of ^{19}O and ^{16}N (both short lived) were very prominent, while after 5 min. lines due to ^{24}Na and ^{56}Mn were the most prominent, although those due to ^{64}Cu and ^{27}Mg became evident. Other isotopes (^{65}Ni, ^{59}Fe, ^{60}Co, ^{65}Zn) are only detected after chemical separation of Na. In the first 10 days, the total activity was found to be reduced by about 360 times (mainly due to ^{24}Na decay). To determine the amount of any of the isotopes, the mean neutron flux and the activation time must be known. These are not available in the case of water reactor coolant. Additional experiments conducted by the authors permit the specific activity of the three most active nuclides to be determined. Samples of $MnSO_4$, Na_2CO_3 and $ZnSO_4$ were irradiated in a thermal column. A simultaneous irradiation of tributyle phosphate and a determination of its specific activity, using a liquid scintillator developed by E. T. Jozefowicz (Ref. 7: Nukleonika (in preparation)), permits determination of the flux. Samples of irradiated Mn, Na and Zn were dissolved in water, and their γ-spectral line densities were compared with those obtained

from the reactor coolant from which the specific activities of these three isotopes in the coolant could be calculated. The presence of individual isotopes in the reactor coolant, their concentration and activity are all time-dependent since some originate from the structural materials (corrosion by water), while concentration of others depends on whether the ion exchange filter is working or not. The specific activity due to ^{65}Zn was found to increase quickly if the ion-exchange filter was not working; a 6 hour working period reduces the ^{65}Zn activity by six times. Neither the fuel nuclides nor any fission products were found in the coolant. The authors express their thanks to K. Żarnowiecki for the preparation of samples, to J. Bouzyk for his help in taking measurements and calculations, to E. T. Józefowicz for the neutron flux measurements and W. Suwalski for his assistance in instrumental problems. There are 11 figures, 2 tables and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: D. W. Moeller: Report ORNL 2311 (1957); R. L. Blanchard, G. W. Leddicotte, D. W. Moeller: Proc. Gen. Conf. 15/P/796 (1958).

Card 5/6

Determination of impurities... 27155 P/046/60/005/010/004/009
D246/D302

ASSOCIATION: Institute of Nuclear Research, Warszawa, Reactor Engineering Department

SUBMITTED: July, 1960

Card 6/6

18.9540 1413, 1045, 1454

21386

P/046/61/006/005/002/002
D219/D304

21.1320 and 1496

AUTHORS: Adamski, Lesław, and Józefowicz, Krystyna

TITLE: Neutron activation of the reactor steel constituents. Cobalt and manganese determination

PERIODICAL: Nukleonika, v. 6, no. 5, 1961, 325 - 334

TEXT: In this paper, the authors calculate the relative activities of components of a typical stainless steel after neutron irradiation in a reactor, for different irradiation and decay times, and a description of the determination of cobalt and manganese content of stainless steel samples by activation analysis is also given. The calculations are of importance in defining the optimum steel composition for reactor purposes, and the actual determinations enable the application of these calculations. The composition of stainless steel, for which calculations were made is typical (0H18 N9) based on Polish Standards PN-54/H-86020, and all data relating

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to the active isotopes is taken from the second edition of BNL-325 /Abstractor's note: No further qualification for this reference is given/. Table 1 shows the results of the calculations. The exposure times of 100 hours and 250 days correspond to one week and one year periods of reactor operation respectively, and the decay times are chosen to be representative of normal working conditions. Iron and chromium are the basic, indispensable constituents of this steel so that although chromium appears, after a decay of 24 hours or more, to give the greatest contribution to the activity, it is still valuable to limit the content of other activable elements which do not have such strong effects on the properties of the steel. The cobalt activity being the longest-lived and also fairly high, may be the most serious under certain conditions. Manganese constitutes the highest proportion of the steel activity during the first hours after irradiation. There is, therefore, interest in both these elements which have been determined by activation with pile neutrons and γ-ray spectroscopy. In this, both the single-

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channel pulse height analyzer LAS "BOKSAN" and the hundred-channel analyzer AI-100 "RADUGA" were used. Due to the similarity between the γ-spectra of Co^{60} and Fe59, the cobalt was separated chemically from the activated specimen, and examined on the assumption that any loss of Co^{60} was proportional to the cobalt content of the sample, and so would not affect relative results. The activity was measured using the hundred-channel analyzer in the region of the Co^{60} lines, and the single-channel analyzer integrally over 1.10 MeV, activity ratios being assumed proportional to cobalt mass ratios. This assumption was established to ± 5 % by a subsidiary experiment using mixtures of cobalt and iron sulphate. The results of the determinations are compared with those of two chemical analyses in Table 2. Sample 3 is taken as a standard for normalization purposes. The steel samples weighed 0.075 g[illegible] and were irradiated in the WWR-S "EWA" reactor. The manganese content was measured more simply by a one minute irradiation of the steel sample in a flux of 10^{12} neutrons/cm^2-sec, and the γ-activity in the region of the 0.84

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MeV line was measured from 5 minutes to one hour after the irradiation. The proportionality between activity and manganese content was again demonstrated in a subsidiary experiment and Table 3 shows a comparison of the results with chemical analyses. Here sample 2 is taken as a standard for normalization. The authors conclude that activation analysis is the most convenient test for determining the manganese content of low manganese steels. The authors express their appreciation to Professor J. Minczewski for his interest. Steel samples were supplied by the Institute of Iron Metallurgy (Gliwice), where the chemical analysis was performed. There are 4 figures, 3 tables and 9 references: 2 Soviet-bloc and 7 non-Soviet-bloc. The references to the four most recent English-language publications read as follows: C.V. Mills, Iron and Steel 32, 149, 1959; T. Westermark and I. Fineman, Proc.Gen.Conf. 15, p 140, 1958; P. Leveque, P. Martinelli, S. May, Intern.J. Applied Radiation and Isotopes, 4, 41, 1958; H.F. Beeghly, Problems in Nuclear Engineering (Ed. Hughes, D.J. and coll.) vol. I, p. 118, Pergamon Press, 1957.

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